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a request to a fixed or Mode II device for a list of available channels the receiving device shall check with the TV bands database that the Mode I device has a valid FCC Identifier before providing a list of available channels. Contact verification signals transmitted for Mode I devices are to be encoded with encryption to secure the identity of the transmitting device. Mode I devices using contact verification signals shall accept as valid for authorization only the signals of the device from which they obtained their list of available channels.

(4) A TV bands database shall be protected from unauthorized data input or alteration of stored data. To provide this protection, the administrator of the TV bands database administrator shall establish communications authentication procedures that allow the fixed or Mode II devices to be assured that the data they receive is from an authorized source.

(5) Applications for certification of TV bands devices are to include a high level operational description of the technologies and measures that are incorporated in the device to comply with the security requirements of this section. In addition, applications for certification of fixed and Mode II devices are to identify at least one of the

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TV bands databases operated by a designated TV bands database administrator that the device will access for channel availability and affirm that the device will conform to the communications security methods used by that database.

(g) A personal/portable TVBD operating in Mode I may only transmit upon receiving the transmissions of fixed or Mode II TVBD. A personal/portable device operating in Mode I may transmit on either an operating channel of the fixed or Mode II TVBD or on a channel the fixed or Mode II TVBD indicates is available for use.

[74 FR 7326, Feb. 17, 2009, as amended at 75 FR 75837, Dec. 6, 2010]

§ 15.712 Interference protection requirements.

(a) Digital television stations, and digital and analog Class A TV, low power TV, TV translator and TV booster stations:

(1) *Protected contour.* TVBDs must protect digital and analog TV services within the contours shown in the following table. These contours are calculated using the methodology in §73.684 of this chapter and the R-6602 curves contained in §73.699 of this chapter.

Type of station	Protected contour		
	Channel	Contour (dBu)	Propagation curve
Analog: Class A TV, LPTV, translator and booster	Low VHF (2–6)	47	F(50,50)
	High VHF (7–13)	56	F(50,50)
	UHF (14–69)	64	F(50,50)
Digital: Full service TV, Class A TV, LPTV, translator and booster.	Low VHF (2–6)	28	F(50,90)
	High VHF (7–13)	36	F(50,90)
	UHF (14–51)	41	F(50,90)

(2) *Required separation distance.* TVBDs must be located outside the contours indicated in paragraph (a)(1) of this section of co-channel and adjacent channel stations by at least the minimum distances specified in the following table. Personal/portable TVBDs operating in Mode II must comply with the separation distances specified for an unlicensed device with an antenna

height of less than 3 meters. Alternatively, Mode II personal/portable TVBDs may operate at closer separation distances, including inside the contour of adjacent channel stations, provided the power level is reduced to 40 mW or less as specified in §15.709(a)(2).

Antenna height of unlicensed device	Required separation (km) from digital or analog TV (full service or low power) protected contour	
	Co-channel (km)	Adjacent channel (km)
Less than 3 meters	6.0	0.1
3—Less than 10 meters	8.0	0.1
10–30 meters	14.4	0.74

(b) *TV translator, Low Power TV (including Class A) and Multi-channel Video Programming Distributor (MVPD) receive sites.* MVPD, TV translator station and low power TV (including Class A) station receive sites located outside the protected contour of the TV station(s) being received may be registered in the TV bands database if they are no farther than 80 km outside the nearest edge of the relevant contour(s). Only channels received over the air and used by the MVPD, TV translator station or low power/Class A TV station may be registered. TVBDs may not operate within an arc of ± 30 degrees from a line between a registered receive site and the contour of the TV station being received in the direction of the station's transmitter at a distance of up to 80 km from the edge of the protected contour of the received TV station for co-channel operation and up to 20 km from the registered receive site for adjacent channel operation, except that the protection distance shall not exceed the distance from the receive site to the protected contour. Outside of this ± 30 degree arc, TVBDs may not operate within 8 km from the receive site for co-channel operation and 2 km from the receive site for adjacent channel operation. For purposes of this section, a TV station being received may include a full power TV station, TV translator station or low power TV/Class A TV station.

(c) *Fixed Broadcast Auxiliary Service (BAS) Links.* For permanent BAS receive sites appearing in the Commission's Universal Licensing System or temporary BAS receive sites registered in the TV bands database, TVBDs may not operate within an arc of ± 30 degrees from a line between the BAS receive site and its associated permanent transmitter within a distance of 80 km from the receive site for co-channel operation and 20 km for adjacent channel

operation. Outside this ± 30 degree arc, TVBDs may not operate within 8 km from the receive site for co-channel operation and 2 km from the receive site for adjacent channel operation.

(d) *PLMRS/CMRS operations:* TVBDs may not operate at distances less than 134 km for co-channel operations and 131 km for adjacent channel operations from the coordinates of the metropolitan areas and on the channels listed in §90.303(a) of this chapter. For PLMRS/CMRS operations authorized by waiver outside of the metropolitan areas listed in §90.303(a) of this chapter, co-channel and adjacent channel TVBDs may not operate closer than 54 km and 51 km, respectively from a base station.

(e) *Offshore Radiotelephone Service.* TVBDs may not operate on channels used by the Offshore Radio Service within the geographic areas specified in §74.709(e) of this chapter.

(f) *Low power auxiliary services, including wireless microphones:* (1) Fixed TVBDs are not permitted to operate within 1 km, and personal/portable TVBDs will not be permitted to operate within 400 meters, of the coordinates of registered low power auxiliary station sites on the registered channels during the designated times they are used by low power auxiliary stations.

(2) TVBDs are not permitted to operate on the first channel on each side of TV channel 37 (608–614 MHz) that is not occupied by a licensed service.

(g) *Border areas near Canada and Mexico:* Fixed and personal/portable TVBDs shall comply with the required separation distances in §15.712(a)(2) from the protected contours of TV stations in Canada and Mexico. TVBDs are not required to comply with these separation distances from portions of the protected contours of Canadian or Mexican TV stations that fall within the United States.

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(h) *Radio astronomy services:* Operation of fixed and personal/portable TVBDs is prohibited on all channels within 2.4 kilometers at the following locations.

(1) The Naval Radio Research Observatory in Sugar Grove, West Virginia.

(2) The Table Mountain Radio Receiving Zone (TMRZ) at 40°07'50" N and 105°15'40" W.

(3) The following facilities:

Observatory	Longitude (deg/min/sec)	Latitude (deg/min/sec)
Allen Telescope Array	121 28 24 W	40 49 04 N
Arecibo Observatory	066 45 11 W	18 20 46 N
Green Bank Telescope (GBT)	079 50 24 W	38 25 59 N
Very Large Array (VLA)	Rectangle between latitudes 33 58 22 N and 34 14 56 N, and longitudes 107 24 40 W and 107 48 22 W	
Very Long Baseline Array (VLBA) Stations:		
Pie Town, AZ	108 07 07 W	34 18 04 N
Kitt Peak, AZ	111 36 42 W	31 57 22 N
Los Alamos, NM	106 14 42 W	35 46 30 N
Ft. Davis, TX	103 56 39 W	30 38 06 N
N. Liberty, IA	091 34 26 W	41 46 17 N
Brewster, WA	119 40 55 W	48 07 53 N
Owens Valley, CA	118 16 34 W	37 13 54 N
St. Croix, VI	064 35 03 W	17 45 31 N
Hancock, NH	071 59 12 W	42 56 01 N
Mauna Kea, HI	155 27 29 W	19 48 16 N

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§ 15.713 TV bands database.

(a) *Purpose.* The TV bands database serves the following functions:

(1) To determine and provide to a TVBD, upon request, the available TV channels at the TVBD's location. Available channels are determined based on the interference protection requirements in § 15.712. A database must provide fixed and Mode II personal portable TVBDs with channel availability information that includes scheduled changes in channel availability over the course of the 48 hour period beginning at the time the TVBDs make a re-check contact. In making lists of available channels available to a TVBD, the TV bands database shall ensure that all communications and interactions between the TV bands database and the TVBD include adequate security measures such that unauthorized parties cannot access or alter the TV bands database or the list of available channels sent to TVBDs or otherwise affect the database system or TVBDs in performing their intended functions or in providing adequate interference protections to authorized services operating

in the TV bands. In addition, a TV bands database must also verify that the FCC identifier (FCC ID) of a device seeking access to its services is valid; under this requirement the TV bands database must also verify that the FCC ID of a Mode I device provided by a fixed or Mode II device is valid. A list of devices with valid FCC IDs and the FCC IDs of those devices is to be obtained from the Commission's Equipment Authorization System.

(2) To register the identification information and location of fixed TVBDs.

(3) To register protected locations and channels as specified in paragraph (b)(2) of this section, that are not otherwise recorded in Commission licensing databases.

(b) *Information in the TV bands database.* (1) Facilities already recorded in Commission databases. Identifying and location information will come from the official Commission database. These services include:

- (i) Digital television stations.
- (ii) Class A television stations.
- (iii) Low power television stations.
- (iv) Television translator and booster stations.

(v) Broadcast Auxiliary Service stations (including receive only sites), except low power auxiliary stations.